PUBLIC HEALTH PROFILES WISCONSIN 1996

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FOREWORD

Public Health Profiles, Wisconsin 1996, a report produced in the Center for Health Statistics, presents selected data on population characteristics, natality, mortality, morbidity, local public health departments, long term care, and hospitalizations in Wisconsin for the calendar year 1996. The data were selected to profile important aspects of public health for the state as a whole, each of the 72 counties, the five Department of Health and Family Services regions, and the seven perinatal regions. These data are presented for the use of local public health professionals and others desiring general information about public health in Wisconsin.

Funds for developing and printing this report were provided by the Bureau of Public Health, Division of Health.

The Center for Health Statistics in the Department of Health and Family Services produced this publication. Bernie Tennis, Pat Guhleman, and Angela Bethel prepared the report under the supervision of Mary Erikson.

Most of the statistics came from data systems maintained in the Center for Health Statistics. Joyce Knapton provided mortality data, Jan Silbaugh provided natality and infant mortality information, Victor Jesudason provided nursing home statistics, Jane Conner provided home health statistics, Fred Buhr provided information on hospitalizations, and Yvonne Brandreth provided the 1996 population estimates.

The morbidity data were provided by John Archer and Anthony Wade in the Communicable Disease Section, Bureau of Public Health. Communicable disease staff can be contacted at (608) 267-9003 for further information on reportable diseases.

Immunization data were provided by Dan Hopfensberger in the immunization unit of the Communicable Disease Section, Bureau of Public Health.

Community Options Program data and MA Waiver data were provided by Sue Liegel in the Division of Supportive Living, Bureau on Aging, and Oliver Gasson, Bureau of Information Services.

Employment data were provided by the Bureau of Workforce Information, Division of Workforce Excellence, Wisconsin Department of Workforce Development.

Motor vehicle crash data were compiled from the WisDOT-DMV Traffic Accident Data Base, and provided by Mary McFarlane of the Division of Planning and Budget, Department of Transportation.

Hospitalization data were extracted from the Hospital Inpatient Database. Primary care physician counts were developed from the physician survey data file. Both sources are maintained by the Office of Health Care Information.

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INTRODUCTION

This report is a profile of selected data about the 1996 Wisconsin population and the natality, mortality, morbidity, local public health, and hospitalization experience of each county in the state. It emphasizes maternal and child health data on a county level and permits comparisons between local and regional or statewide indicators of health. These data should be useful in program planning, development and evaluation by local health departments; local, regional, and state planners; and other interested parties.

All of the data represent events or estimates for the year. All county and regional information (except average wage and motor vehicle crash statistics) are derived from resident data. This means that all natality, mortality, morbidity, and hospitalization events are based on county of residence regardless of where the event occurred. Maps that show the current boundaries for the Department of Health and Family Services and perinatal regions precede these sections.

Further details and additional data are reported in the following Division of Health publications:

Wisconsin Births and Infant Deaths, 1996 Wisconsin Deaths, 1996

Wisconsin Local Health Department Services, 1996

Health Care Data Report, 1996 (Office of Health Care Information)

Wisconsin Home Health Services, 1996

Wisconsin Nursing Home Directory and Fact Book, 1996

Wisconsin Nursing Homes and Residents, 1996

ABOUT THE DATA

SOURCES AND LIMITATIONS

Most county and regional data presented in this report are "resident" data. This means that all natality, mortality, morbidity, hospitalization, long-term care, and labor force statistics are categorized by state and county of residence regardless of where the event occurred. The only exceptions are motor vehicle crash statistics, which are by location of the crash, and average wage, which is by place of work.

Population

The population by age and sex was estimated for July 1, 1996 by the Center for Health Statistics. Estimated populations by age and sex are reported rounded to the nearest ten.

Rates

Rates per population are calculated using 1996 population estimates. A crude rate is the simple rate per 1,000 (or 10,000 or 100,000) people. It is termed "crude" because it does not incorporate the effect of the population's age distribution on the rate. In contrast, an age-specific or age-standardized rate takes the age distributions into account, and would be preferred over a crude rate for comparisons between populations with different age distributions.

Rates for some events were not calculated. For most measures, numerators of fewer than 20 events (indicated by ".") were judged too small to calculate rates that are meaningful; such rates would be misleadingly unstable over time because small annual fluctuations in the number of events can create large changes in a rate. Calculation of some other rates is inappropriate for other reasons (indicated by "--"); for example, the population base for a fertility rate for females under 15 years old cannot be estimated accurately.

Primary Care

The physician specialities listed are those that typically provide primary care. The counts were obtained from the 1996 physician survey, administered by the Office of Health Care Information, which contains information from all physicians practicing in Wisconsin. Because physicians may split their time between locations in two different counties or provide patient care only part time, the full time equivalents will be less than the numbers on the report.

Employment Statistics

Data on civilian labor force, employment, unemployment, and average wage were obtained from the Bureau of Workforce Information, Division of Workforce Excellence, Wisconsin Department of Workforce Development.

Specific definitions include:

Average annual wage in jobs covered by unemployment compensation is the yearly total gross wages (including commission, vacation and sick pay, etc.) in jobs covered by Wisconsin's Unemployment Compensation Law, divided by the average number employed per month. The information comes from reports submitted by employers, and is based on the person's place of work, not county of residence. (All other data in this section, and most data in this publication, are based on county of residence.)

The civilian labor force includes all persons 16 years of age or over who are either employed or unemployed. This statistic does not include members of the Armed Forces or "discouraged workers" who are not either actively seeking employment, about to start a new job, or waiting to be called back from a layoff.

Employed persons are individuals 16 years or older who worked for pay anytime during the week that includes the 12th day of the month, or who worked unpaid for 15 hours or more in a family-owned business, or who were temporarily absent from their jobs due to illness, bad weather, vacation, labor dispute, or personal reasons.

Unemployed persons are individuals 16 years or older who had no employment, were available for work, and either actively seeking employment, about to start a new job, or waiting to be called back from a layoff.

Long-Term Care

Data for the Community Options Program (COP) and MA Waiver programs are maintained in the Human Services Reporting System under the control of the Division of Supportive Living. In most cases these programs are administered by a single county agency. For those counties that have more than one agency serving different populations the data were combined to produce the numbers on the report. The total COP/Waiver client count is less than the sum of the clients by program because many clients receive services in more than one program and these clients are not duplicated in the total. Both the client counts and the costs are taken from the reporting system prior to any year-end contract adjustments with the agencies.

Data concerning home health services are based on the 1996 Annual Survey of Home Health Agencies conducted by the Center for Health Statistics in cooperation with the Bureau of Quality Assurance in the Division of Supportive Living and the Bureau of Health Care Financing in the Division of Health. The counts of agencies are for those located in the state, region, and county. Patient counts are for patients residing in the state, region, and county. Agencies may have patients from other counties and resident patients may use agencies located in other counties.

Data concerning nursing homes are drawn from the 1996 Annual Survey of Nursing Homes, also conducted by the Center for Health Statistics in cooperation with the Bureau of Quality Assurance in the Division of Supportive Living and the Bureau of Health Care Financing. As with home health, the counts of nursing homes and patients are for those located in the state, region, and county. Nursing homes include skilled nursing facilities (SNFs), intermediate care facilities (ICFs), institutions for mental disease (IMDs) and facilities for the developmentally disabled (FDDs). This report excludes the three state centers for the developmentally disabled; it also excludes Clearview Sanatorium in Delafield since this religious facility differs significantly from other nursing homes in the types of care provided and has been waived from Medicare regulations.

Local Health Department Statistics

The reported data for local health department staff, expenses, nursing visits, clinic visits, environmental contacts, school health services, and group health education and training are based on responses to the Annual Survey of Local Health Departments, conducted by the Center for Health Statistics. Aggregate information for calendar year 1996 was collected from each local health department through the annual report. Rates for counties with more than one health department are not calculated if all departments did not report. For a few reported activities, differences exist between the statewide totals reported here and the statewide totals reported in *Wisconsin Local Health Department Services 1996*. These differences result from the calculations for three or four counties. WIC participant counts were provided by Deborah Grenier in the Bureau of Public Health, Division of Health. The WIC line on the total state report counts recipients receiving benefits in more than one county only once; it is therefore less than the sum of the counties. Regional values were obtained by summing the county values.

Natality

Natality data are drawn from birth certificates maintained by the Center for Health Statistics. These data include characteristics of the infant and pregnancy (birthweight, delivery method, birth order, trimester of first prenatal care visit, and number of prenatal care visits) and attributes of the mother (age, marital status, education, and race).

Natality data include records on births to state residents that occur outside Wisconsin. These records are obtained from the state of occurrence. Thus, county birth data are for all births to county residents regardless of where the births occurred.

Specific definitions:

A **live birth** is the complete expulsion or extraction of an infant from its mother, irrespective of the duration of pregnancy, which after such separation breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

The **birthweight** is the infant weight at time of delivery (reported here in grams).

A mother is defined as a **smoker** if she smoked cigarettes at any time during the pregnancy, as reported on the birth certificate.

Teen births are births in which the mother was less than 20 years old.

Formulas for rates are defined on Page 9. For example:

The **crude birth rate** is the number of live births per 1,000 people.

The **general fertility rate** is the number of live births per 1,000 women of childbearing age (15-44).

The **age-specific fertility rate** is the number of births to women in an age category per 1,000 women of that age. Many counties have a small number of births in some maternal age groups, and rates would be unreliable.

The **teen birth rate** is calculated by dividing the number of births to females under 20 years old by the number of females age 15-19, and multiplying the result by 1,000.

Rates were not calculated when based on fewer than 20 events (indicated by ".").

Morbidity

Morbidity data are shown for 21 reportable diseases, generally those with the highest numbers of reported cases in the state and diseases identified in the document *Healthier People in Wisconsin*, *A Public Health Agenda for the Year 2000*. The numbers of reported cases of selected diseases were obtained from the Communicable Disease Section of the Bureau of Public Health. Wisconsin Statute Chapter 252 and Administrative Rule Chapter HSS 145 require the surveillance and control of specified communicable diseases.

Completeness of reporting varies by disease. The figures for a county or region refer to reported cases among residents of that county or region, regardless of where the disease was contracted. Specific counts for a year are subject to some slight changes over time as medical tests reveal previously unidentified cases or change previous diagnoses.

The symbol "<5" denotes that the number of reported cases is between 1 and 4. The exact number is suppressed to maintain confidentiality.

Immunizations

The percent of children compliant with immunization requirements is based on reports required from all public and private schools and compiled by the Communicable Disease Section, Bureau of Public Health. The number of non-compliant children includes those whose parents have filed waivers based on personal conviction, religious, or medical grounds.

Mortality

Mortality data are drawn from three sources maintained by the Center for Health Statistics:

- Death certificates.
- Infant death certificates matched with the corresponding birth certificates,
- Fetal death reports (deaths of fetuses of at least 20 weeks of gestation).

Specific definitions:

Cause of death is based on the underlying cause of death, as recorded on death certificates. The categories and ICD-9-CM codes are listed on Page 10.

Fetal deaths are deaths prior to the complete expulsion or extraction from its mother of a product of conception; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles. Only deaths of fetuses of at least 20 weeks gestation must be reported in Wisconsin. Fetal death reports do not include induced abortions.

Infant deaths are deaths of a live-born individual less than one year of age.

Neonatal deaths are deaths of a live-born infant less than four weeks (28 days) of age.

Perinatal deaths are neonatal deaths plus all reported fetal deaths of 20 or more weeks gestation.

Postneonatal deaths are deaths of an infant between four weeks (28 days) and one year of age.

The base for the reported death rates varies:

The **crude death rate** is the total number of deaths per 100,000 population.

The crude rate for **causes of death** is the number of deaths from a cause per 100,000 population.

The rate for **deaths by age** is the number of deaths in an age group per 100,000 population in that age group.

The **neonatal**, **postneonatal**, **and infant death rates** are the number of deaths per 1,000 live births.

The **fetal and perinatal death rates** are the number of deaths per 1,000 live births and fetal deaths.

The race-specific and weight-specific **infant death rates** are deaths per 1,000 live births in that race or weight category.

Rates were not calculated when based on fewer than 20 events (indicated by ".").

The selected causes of death were included if they were either:

- One of the four leading causes of death (heart disease, cancer, cerebrovascular disease, injuries) or
- A preventable cause of death mentioned in the document *Healthier People in Wisconsin*, *A Public Health Agenda for the Year 2000*, with at least 500 deaths in Wisconsin in 1991.

Motor Vehicle Crashes

Motor vehicle crash data are occurrence data from the county in which the crash took place. (Most other data in this publication are based on the county of residence.) County statistics on persons injured and killed therefore do not include county residents who were injured or killed outside the county, and may include persons who are residents of other counties or other states.

Data on injuries and fatalities in motor vehicle crashes were obtained from the WisDOT-DMV Traffic Accident Data Base of the Wisconsin Department of Transportation. These data were reported by state and local law enforcement agencies.

Specific definitions:

Persons injured were physically harmed or complained of physical harm from injuries received in the crash, but did not die within 30 days of the crash.

Persons killed were all persons who died within 30 days from injuries received in the crash.

Alcohol-related crash is a crash in which either a driver, bicyclist or pedestrian is listed on a police or coroner report as drinking alcohol before the crash.

Crashes with a **citation for OWI** are those in which a law enforcement official has issued a citation for violation of Wis. Statute 346.63, "Operating under influence of intoxicant or other drug."

Hospitalizations

The reported data for hospitalizations were obtained from the public use tape of calendar year 1996 inpatient discharges supplied by the Office of Health Care Information. Information was not available on Wisconsin residents hospitalized out of state. Therefore, caution is advised when analyzing the hospital data for border counties since residents of these counties may receive a significant amount of care from out-of-state facilities. The reported numbers and rates of hospital discharge from border counties are proportionally low.

Diagnostic definitions used for the categories are based upon objectives outlined in the document *Healthier People in Wisconsin, A Public Health Agenda for the Year 2000*, and definitions established by the federal Centers for Disease Control and the Missouri Center for Health Statistics. The categories are based on the principal diagnosis. All definitions were reviewed by the Bureau of Public Health for accuracy and completeness. The descriptions and ICD-9-CM diagnostic codes for each category are listed on Page 11.

Hospitalizations are measured as inpatient discharges. Hospitalizations for an individual can occur more than once due to multiple admissions and transferring between hospitals. The diagnoses most affected by transfers are malignant neoplasms, mental disorders, cerebrovascular disease, coronary heart disease and injury-related diagnoses.

Average charges for a particular county, diagnostic category and age group were calculated by dividing the total charges by the number of discharges with reported charges. The charge per person was calculated by dividing the total charges by the estimated total population.

The rate of discharge per 1,000 population was calculated by dividing the number of discharges in a particular county, diagnostic category and age group by the total population in that county and age group and multiplying the results by 1,000. One exception, female breast cancer, uses only the female population as the denominator. Rates at the county level were not calculated for diagnoses with fewer than 20 cases in the age group. If fewer than 2,000 discharges occurred for any given diagnosis and age group at the state level, the age group was not listed.

[Technical Note: Length of stay and charge outliers were defined as values below the 1st percentile or above the 99th percentile, i.e., the highest one percent and the lowest one percent. In these cases, the length of stay or charge was set to the 1st or 99th percentile value. Since reporting of charges is optional for lengths of stay over 100 days, the charges for those cases with a missing charge and length of stay over 100 days were also set to the 99th percentile value.]

The list of conditions included in preventable hospitalizations was taken from a study by the United Hospital Fund of New York (Ambulatory Care Access Project, principal investigator John Billings). The diagnoses were defined by a medical panel of internists and pediatricians, and included conditions such as asthma, diabetes, bacterial pneumonia and bronchitis where timely and effective ambulatory care can reduce the likelihood of hospitalization by: (1) preventing the onset of an illness or condition; (2) controlling an acute episodic illness or condition; or (3) managing a chronic disease or condition. The descriptions and ICD-9-CM diagnostic codes for each preventable category are listed on Page 12.

FORMULAS FOR NATALITY AND MORTALITY RATES

Natality

Natality	Crude Birth Rate	Ξ	= 1,000 x	Number of Resident Live Births Total Resident Population	
	General Fertility Rat	e =	= 1,000 x	Number of Resident Live Births Number of Females Ages 15-44	
Age-Spe	cific Fertility Rate	= 1,000 x	x <u>Numb</u>	ber of Resident Live Births in Age Category Number of Females in Age Category	
Mortality Crude	Death Rate	= 100,00	1 / X	nber of Resident Deaths al Resident Population	
Crude Death	Cause-Specific Rate	= 100,00	0 x <u>Num</u>	ber of Resident Deaths from Cause Total Resident Population	
Fetal D	Death Rate	= 1,000 x	7	Number of Resident Fetal Deaths Total Resident Live Births & Fetal Deaths	
Neona	tal Death Rate	= 1,000 x	(er of Resident Neonatal Deaths Otal Resident Live Births	
Postne	onatal Death Rate	= 1,000	<u>Numbe</u>	er of Resident Postneonatal Deaths Total Resident Live Births	
Perinat	tal Death Rate	= 1,000	(er of Resident Fetal & Neonatal Deaths Resident Live Births & Fetal Deaths	
Infant l	Death Rate	= 1,000 2	(er of Resident Infant Deaths tal Resident Live Births	
Race-S Death	Specific Infant Rate	= 1,000 x	(er of Infant Deaths to Mothers in Race Category ber of Live Births to Mothersin Race Category	
Weigh Death	t-Specific Infant Rate	= 1,000 x	(er of Infant Deaths in Birthweight Category ber of Live Births in Birthweight Category	

CATEGORIES OF UNDERLYING CAUSE OF DEATH WISCONSIN, 1996

Description		ICD-9-CM CODE		
Infectious and Parasitic Diseases		001-139.8		
Total Malignant Neoplasms		140-208.9		
Lung Cancer		162-162.9		
Female Breast Cancer		174-174.9		
Colorectal Cancer		153-154.8		
Diabetes		250-250.9		
Total Heart Disease				
 Rheumatic fever with heart ir 	 Rheumatic fever with heart involvement 			
— Rheumatic chorea		392-392.9		
 Chronic rheumatic heart disea 	ase	393-398.9		
 Hypertensive heart disease 		402-402.9		
 Hypertensive heart & renal d 	isease	404-404.9		
Secondary hypertension		405-405.9		
— Ischemic heart disease		410-414.9		
 Diseases of pulmonary circul 	ation	415-417.9		
Other heart disease	ution	420-429.9		
Coronary Heart Disease		120 125.5		
Ischemic heart disease		410-414.9		
 Unspecified cardiovascular d 	isease	429.2		
r				
Cerebrovascular Disease		430-438		
Pneumonia & Influenza		480-487.8		
Chronic Obstructive Pulmonary Dise	ase	490-496		
Total Unintentional Injuries		E 800-949.9		
Motor vehicle crashes		E 810-825		
1120002 (0111010 0111010		2 010 020		
Suicide		E 950-959		
DRUGS LISTED AS UNDERLYIN	NG OR CONTRIBUTORY	CAUSE OF DEATH		
Alcohol		03, 305.0, 357.5, 425.5, 535.3, 80.0, 980.9, E860.0, E860.1, E860.9		
Other Drugs	,	.9, 305, 305.1-305.9, 760.7, 779.5, 850, E850.0, E851, E935-935.2,		

E858.8, E869.0, E937-940.9, E980-980.5

FIRST-LISTED DIAGNOSES ASSOCIATED WITH HOSPITALIZATIONS WISCONSIN, 1996

Description	ICD-9-CM CODE
Malignant neoplasms	140.0-208.9
Lung cancer	162.0-162.9
Female breast cancer	174.0-174.9
Colo-rectal cancer	153.0-154.8
Diabetes	250.0-250.9
Alcohol-related	
Alcohol psychoses	291.0-291.9
Alcohol dependence syndrome	303.0-303.03
Alcohol abuse	305.00-305.03
Alcoholic polyneuropathy	357.5
Alcoholic cardiomyopathy	425.5
Alcoholic gastritis	535.3
Chronic liver disease and cirrhosis	571.0-571.3
Excessive blood level of alcohol	790.3
Drug-related	
Drug psychoses	292.0-292.9
Drug dependency	304.00-304.93
Non-dependent abuse of drugs	305.10-305.93
Psychiatric (excluding those related to alcohol or drugs)	290.0-319
Coronary heart disease	
Ischemic heart disease	410.0-414.9
Unspecified cardiovascular disease	429.2
Cerebrovascular disease	430-438
Pneumonia & Influenza	480.0-487.8
Chronic obstructive pulmonary disease	490-496
Osteoporosis	733.00-733.09
All Injuries	800-999
Hip fracture	820.00-820.9
Poisonings	960.0-989.9

DIAGNOSES DEFINING PREVENTABLE HOSPITALIZATIONS

Description	ICD-9-CM Code
Congenital syphilis (secondary diagnosis for newborns) Immunization preventable conditions	090.0-090.9 033.0-033.9, 390, 391.0-391.9, 037, 045.00-045.93, 320.0 (ages 1-5)
Grand mal status and other epileptic convulsions	345.0-345.9
Convulsions "A"	780.3 (ages 0-5)
Convulsions "B"	780.3 (ages >5)
Severe ear, nose and throat infections (except with a	202 0 202 0 462 462 465 0 465 0 472 1
procedure of 20.01)	382.0-382.9, 462, 463, 465.0-465.9, 472.1
Pulmonary tuberculosis	011.00-011.96
Other tuberculosis	012.00-018.96
Chronic obstructive pulmonary disease	491.0-942.8, 494, 496, 466.0
	(only with secondary diagnosis of 491, 492, 494, 496)
Bacterial pneumonia (except with a	491, 492, 494, 490)
secondary diagnosis of 282.6 and	
infants under 2 months of age)	481, 482.2, 482.3, 482.9, 483, 485, 486
Asthma	493.00-493.91
Congestive heart failure (except with a procedure	1951.00 1951.91
of 36.01-36.02, 36.05, 36.1, 37.5, 37.7)	428.0-428.9, 402.01, 402.11, 402.91, 518.4
Hypertension (except with a procedure 36.01-	, , , , , , , , , , , , , , , , , , , ,
36.02, 36.05, 36.1, 37.5, 37.7)	401.0, 401.9, 402.00, 402.1, 402.90
Angina (except with any procedure 01.01-86.99)	411.1, 411.8, 413.0-413.9
Cellulitis (except with any procedure 01.01-	
86.99 unless only listed procedure is 86.0)	681.00-683, 686.0-686.9
Skin grafts with cellulitis (except if admitted	
from an SNF or ICF)	DRG 263 and 264
Diabetes A	250.10-250.31
Diabetes B	250.80-250.91
Diabetes C	250.00-250.01
Hypoglycemia	251.2
Gastroenteritis	558.9
Kidney/urinary infection	590.0-590.9, 599.0, 599.9
Dehydration - volume depletion (examine	25.5
principal and secondary diagnoses separately)	276.5
Iron deficiency anemia (ages 0-5 only; examine	200 1 200 0 200 0
principal and secondary diagnoses separately)	280.1, 280.8, 280.9
Nutritional deficiencies (examine principal and	260 262 269 0 269 1
secondary diagnoses separately)	260-262, 268.0, 268.1
Failure to thrive (ages <1)	783.4
Pelvic inflammatory disease (except with a	614.0-614.9
procedure 68.3-68.8) Dental conditions	
Dental Colluttions	521.0-523.9, 525.0-525.9, 528.0-528.9